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Customer Number

Patent
Case No.: 59606US007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: PEUKER, MARC

Application No.: 10/598343 Confirmation No.: 2805

Filed: 25-FEB-2005 Group Art Unit: 3700

Title: DOSE DELIVERY SYSTEM

BRIEF ON APPEAL

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July 6, 2011	/Tracey L. Riley/ Signed by: Tracey L. Riley
Date	

Dear Sir:

This is in appeal to the Office Action, dated February 8, 2011, finally rejecting claims 20 and 24 through 35 in the United States patent application identified above. The deadline for filing this Brief on Appeal is July 6, 2011, and accordingly it is timely filed.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance would be payable upon receipt of the Examiner's Answer.

Fees

- Any required fee will be made at the time of submission via EFS-Web. In the event fees are not or cannot be paid at the time of EFS-Web submission, please charge any fees under 37 CFR § 1.17 which may be required to Deposit Account No. 13-3723.
- Please charge any fees under 37 CFR §§ 1.16 and 1.17 which may be required to Deposit Account No. 13-3723.
- Please charge any additional fees associated with the prosecution of this application to Deposit Account No. 13-3723. This authorization includes the fee for any necessary extension of time under 37 CFR § 1.136(a). To the extent any such extension should become necessary, it is hereby requested.
- Please credit any overpayment to the same deposit account.

REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) of St. Paul, Minnesota and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

STATUS OF CLAIMS

Claims 20 and 24 through 35 are pending and stand finally rejected.

STATUS OF AMENDMENTS

No amendments have been filed after the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The claims at issue concern a delivery system for controlled dispensing of a substance. The system includes a cartridge having at least two compartments for storing material components, wherein the system is adapted to mix the components to form a substance. Para. 0031. The delivery system further includes a plunger having at least two pistons for sealing the respective compartments and advancing the material components in the at least two compartments, para. 0031, a lever and a geared connection rod for providing a controlled dispensing of the substance, para. 0038, and a self-opening closure system which seals the front ends of the compartments and opens when the plunger is advanced, the self-opening closure system comprising a plug that may be pushed forward upon movement of the plunger toward the front end of the cartridge. Para. 0036.

FIRST GROUND OF REJECTION

Claims 20, 25, 27, 31, 33 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,735,436 (Broyles et al.) in view of U.S. Patent No. 4,040,420 (Speer).¹

SECOND GROUND OF REJECTION

Claims 20, 25, 27 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Publication No. 2004/0024353 (Petersen et al.) in view of Speer.

THIRD GROUND OF REJECTION

Claims 20 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,007,515 (Epstein et al.) in view of Speer.

FOURTH GROUND OF REJECTION

Claim 24 was rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer and in view of U.S. Patent Publication No. 2003/0186190 (Lokhandwala et al.)

FIFTH GROUND OF REJECTION

Claim 26 was rejected under 35 U.S.C. § 103(a) as unpatentable over Epstein et al. in view of Speer and further in view of Lokhandwala et al.

SIXTH GROUND OF REJECTION

Claims 28 through 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over Petersen et al. in view of Speer and further in view of U.S. Patent No. 6,544,233 (Fukui et al.).

SEVENTH GROUND OF REJECTION

Claim 32 was rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer and further in view of U.S. Patent Publication No. 2004/0072123 (Simonton et al.).

¹ The Office Action at page 2, paragraph 2 rejects claims 20, 25, 27, 31, 33, and 35 as unpatentable over Broyles et al. in view of Dai et al., but appears to rely on Broyles et al. and Speer. Speer appears to be relied on in place of Dai et al. in subsequent rejections as well.

EIGHTH GROUND OF REJECTION

Claim 34 was rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer, further in view of Simonton et al., and further in view of U.S. Patent No. 6,264,619 (Ferguson).

ARGUMENT**First Ground of Rejection**

Claims 20, 25, 27, 31, 33 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer. The Examiner indicated that Broyles et al. describes a delivery system that includes each element of claim 20 with the exception of a self-opening closure system which seals the front ends of the compartments and opens when the plunger is advanced, and which comprises a plug that may be pushed forward upon movement of the plunger toward the front end of the cartridge. The Examiner concluded, however, that the device of Speer includes these features, and that it would have been obvious to one of skill in the art to modify the device of Broyles et al. with the closure system of Speer. Appellants disagree at least because the device of Speer does not include the self-opening closure system of claim 20, and such a combination would destroy the functionality of the device of Broyles et al. It is respectfully requested that the rejection be reversed.

Broyles et al. describes a dispenser for dispensing relatively low viscosity material, and includes a lever that is movable to advance a plunger in a chamber. Abstract. The dispenser is adapted to precisely dispense only a single drop or less of material from each material-containing chamber. Col. 2, lines 21-23. A cap is provided to seal the outlet openings of the device, col. 6, lines 36-37, and includes a lever locking structure that retains the lever in its first position such that the plunger cannot be advanced when the cap is connected to the body of the device. Col. 6, lines 1-14.

Speer describes a dual syringe-type apparatus for separately storing and dispensing two different viscous liquid materials from first and second cylinders. Abstract; Col. 2, line 67-col. 3, line 4. A removable cap or plug, shown in Figure 1 at 84, is provided to seal nozzle openings

42 and 44 between uses, and includes cylindrical projections 86 and 88 configured to fit within the corresponding openings 42 and 44. Col. 3, lines 65-68; Fig. 1. A needle block assembly is provided for attachment to the dispensing nozzle end of the apparatus prior to dispensing (and after removing the plug). Col. 2, lines 19-20.

The proposed combination of the device of Broyles et al. with the plug of Speer does not render claims 20, 25, 27, 31, 33 and 35 obvious for at least three reasons.

First, the proposed combination does not include each element of independent claim 20. Claim 20 includes a *self-opening* closure system which seals the front ends of the compartments and opens when the plunger is advanced. The device of Speer, however, includes a plug 84 to seal the opening of the device, and a needle block assembly that is fitted over the nozzles of the cylinder, in place of plug 84, prior to use. Col. 3, lines 65-66; Col. 5, lines 20-36; Figs 4-6. Speer does not describe or suggest a self-opening closure system, and the Examiner has provided no support for the proposition that the plug of Speer is forced off when the plunger is pushed forward with “enough force.” Office Action, p. 3. One of skill in the art could reasonably conclude that “enough force” could not be reasonably applied (because the plug presumably is intended to remain on the device), or that before “enough force” is applied to force the plug off, the liquid contents of the cylinders would leak past the plunger, or the syringe itself would rupture. Accordingly, one of skill in the art would not understand Speer to include or suggest the self-opening closure system of claim 20.

Second, the combination proposed by the Examiner destroys the functionality of the device of Broyles et al. which is intended to “precisely dispense” its contents, and designed with special care to “prevent unintentional discharge.” Broyles et al., Abstract; Col. 2, line 23. Even if the plug of Speer were capable of being forced out of the nozzle by advancement of the plunger, the “low viscosity” materials contained in the cylinders would likewise be forced out at a heightened pressure, likely spilling and splattering in an undesirable manner. Such a result is inconsistent with the importance of precise material dispensing as taught by Broyles et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner and ignore that teaching.

Third, the device of Broyles et al. already includes a cap for sealing the outlet of the device, and the proposed combination destroys the functionality of this cap which is designed to

prevent movement of the plunger while the cap is attached. One of skill in the art would have no reason to substitute the cap of Broyles et al. with the plug of Speer, in contravention of the teachings of Broyles et al., when neither reference provide a suggestion of possible advantages associated with such a system. Replacing the locking cap of Broyles et al. with a self-opening closure system would only be considered upon consideration of Applicants' own specification, which is impermissible.

Ultimately, the proposed combination of the device of Broyles et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20, and it destroys the functionality of the device of Broyles et al. Claims 25, 27, 31, 33 and 35 depend from and include each element of independent claim 20, and are in condition for allowance for at least the same reasons. It is respectfully requested that the rejections of claims 20, 25, 27, 31, 33 and 35 be reversed.

Second Ground of Rejection

Claims 20, 25, 27 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over Petersen et al. in view of Speer. The Examiner indicated that Petersen et al. describes a delivery system that includes each element of claim 20 with the exception of a self-opening closure system which seals the front ends of the compartments and opens when the plunger is advanced, and which comprises a plug that may be pushed forward upon movement of the plunger toward the front end of the cartridge. The Examiner concluded, however, that the device of Speer includes these features, and that it would have been obvious to one of skill in the art to modify the device of Petersen et al. with the closure system of Speer. Appellants disagree for reasons the same as or similar to those presented above: the device of Speer does not include the self-opening closure system of claim 20, and such a combination would destroy the functionality of the device of Petersen et al. It is respectfully requested that the rejection be reversed.

Petersen et al. describes an applicator gun for spraying a medically useful multiple component fluid toward an area of interest. Abstract. The device is described in relation to tissue sealants and other materials for use in surgical techniques, para. 0001, and is said to enable the operator to easily apply material from commercially available component dispensers with an increased degree of controllability. Para. 0027.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Petersen et al. which is intended to provide “increased dispensing control.” Para. 0008. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, causing spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of controlled material dispensing described by Petersen et al., and accordingly one of skill in the art would have no reason to consider the combination proposed by the Examiner.

The proposed combination of the device of Petersen et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Petersen et al. Claims 25, 27, and 35 depend from and include each element of independent claim 20, and are in condition for allowance for at least the same reasons. It is respectfully requested that the rejections of claims 20, 25, 27, and 35 be reversed.

Third Ground of Rejection

Claims 20 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over Epstein et al. in view of Speer. The Examiner indicated that Epstein et al. describes a delivery system that includes each element of claim 20 with the exception of a self-opening closure system which seals the front ends of the compartments and opens when the plunger is advanced, and which comprises a plug that may be pushed forward upon movement of the plunger toward the front end of the cartridge. The Examiner concluded, however, that the device of Speer includes these features, and that it would have been obvious to one of skill in the art to modify the device of

Epstein et al. with the closure system of Speer. Appellants disagree at least because the device of Speer does not include the self-opening closure system of claim 20, and such a combination would destroy the functionality of the device of Epstein et al. It is respectfully requested that the rejection be reversed.

Epstein et al. describes a manually operable fluid applicator for dispensing multiple medically useful fluids. Abstract. The device is said to solve a problem of providing a manually operable fluid applicator with a precisely controllable action for dispensing small quantities of fluids. Col. 2, lines 52-55.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Epstein et al. which is intended to provide a “precisely controllable action for dispensing small quantities of fluids.” Col. 2, lines 52-55. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, thereby spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of precise material dispensing described by Epstein et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner.

The proposed combination of the device of Epstein et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Epstein et al. Claim 35 depends from and includes each element of independent claim 20, and is in condition for allowance for at least the same reasons. It is respectfully requested that the rejections of claims 20 and 35 be reversed.

Fourth Ground of Rejection

Claim 24 was rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer and further in view of Lokhandwala et al. The Examiner indicated that a combination of the devices of Broyles et al. and Speer includes each element of claim 24, with the exception of a lever and pawl adapted to reset to their original positions after each activation without the presence of additional springs. The Examiner concluded, however, that the device of Lokhandwala et al. includes these features, and that it would have been obvious to one of skill in the art to modify the device of Broyles et al. and Speer with this feature of Lokhandwala et al. Appellants respectfully disagree at least because the proposed combination does not include each element of claim 24, and such a combination destroys the functionality of the device of Broyles et al.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Broyles et al. which is intended to provide “increased dispensing control.” Para. 0008. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, thereby spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of precise material dispensing described by Broyles et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner.

The proposed combination of the device of Broyles et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Broyles et al. Lokhandwala does nothing to remedy these deficiencies. Claim 24 depends from and includes each element of

independent claim 20, and is in condition for allowance for at least the same reasons as claim 20. It is respectfully requested that the rejection of claim 24 be reversed.

Fifth Ground of Rejection

Claim 26 was rejected under 35 U.S.C. § 103(a) as unpatentable over Epstein et al. in view of Speer and further in view of Lokhandwala et al. The Examiner indicated that the combination of the devices of Epstein et al. and Speer include each element of claim 26 with the exception of a reinforcement member for hindering backlash movement of the connection rod, wherein a pawl is adapted to lift the reinforcement member and thereby release the connection rod. The Examiner concluded, however, that the device of Lokhandwala et al. included this feature, and that it would have been obvious to one of skill in the art to modify the combination of Epstein et al. and Speer with this feature of Lokhandwala et al. Appellants disagree at least because such a combination does not result in a device having each element of claim 26, and such a combination would destroy the functionality of Epstein et al. It is respectfully requested that the rejection be reversed.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Epstein et al. which is intended to provide a “precisely controllable action for dispensing small quantities of fluids.” Col. 2, lines 52-55. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, thereby spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of precise material dispensing described by Epstein et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner.

Ultimately, the proposed combination of the device of Epstein et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Epstein et al. Lokhandwala et al. does nothing to remedy these deficiencies. Claim 26 depends from and includes each element of independent claim 20, and is in condition for allowance for at least the same reasons as claim 20. It is respectfully requested that the rejection of claim 26 be reversed.

Sixth Ground of Rejection

Claims 28 through 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over Petersen et al. in view of Speer and further in view of Fukui et al. The Examiner indicated that the combination of the devices of Petersen et al. and Speer include each element of claim 20, but does not include a reservoir comprising a sleeve which is movable over the exterior surface of the cartridge and a cavity for receiving the substance exiting the cartridge, as required by claim 28, wherein the lever is attached to a sleeve, and a pawl engages with the lever so that upon each push of the lever, the cartridge is caused to move forward toward the cavity thereby providing controlled dispensation of the substance, as required by claim 29, or wherein by pressing the lever, a pawl engages with the connecting rod and thereby activates a plunger, and a piston is moved forward into the reservoir, as required by claim 30. The Examiner concluded, however, that the device of Fukui et al. includes these features, and that it would have been obvious to one of ordinary skill in the art to modify the combination of Petersen et al. and Speer with the syringe of Fukui et al. Appellants disagree at least because such a combination does not result in a device having each element of claims 28 through 30. It is respectfully requested that the rejection be reversed.

Fukui et al. describes a pre-filled syringe including an outer cylinder and an inner cylinder movable in the outer cylinder and forming a first space between the inner cylinder and an inner front end of the outer cylinder. Abstract. A first medicine is sealed in the space formed in the front side of the outer cylinder, and a second medicine is sealed in a space located between a first gasket and a second gasket accommodated in the inner cylinder. Col. 6, lines 46-49. When the first gasket moves to the front end of the inner cylinder due to forward motion of a plunger, the second medicine flows into the space sealing the first medicine therein through a

bypass duct. Col. 6, lines 50-54. When the medicines are mixed, a plunger is moved forward again to inject the medicine to a patient. Col. 13, lines 19-22.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Petersen et al. which is intended to provide “increased dispensing control.” Para. 0008. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, thereby spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of controlled material dispensing described by Petersen et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner.

Accordingly, the proposed combination of the device of Petersen et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Petersen et al. Fukui et al. does nothing to remedy these deficiencies. Claims 28 through 30 depend from and include each element of independent claim 20, and are in condition for allowance for at least the same reasons as claim 20. It is respectfully requested that the rejection of claims 28 through 30 be reversed.

Specifically regarding claim 29, the proposed combination does not include a lever attached to a sleeve. The syringe of Fukui et al. does not include a lever according to claim 29 at all, and it is unclear how combination with Petersen et al. remedies this defect. Even if the combination of the syringe of Fukui et al. with the applicator of Petersen et al. would result in a functional device, it would not include each element of claim 29. Accordingly, the rejection of claim 29 should be reversed for this additional reason.

Seventh Ground of Rejection

Claim 32 was rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer and further in view of Simonton et al. The Examiner indicated that the combination of the devices of Broyles et al. and Speer include each element of claim 32, but does not include a brush. The Examiner concluded, however, that Simonton describes a brush, and that it would have been obvious to one of ordinary skill in the art to modify the combination of Broyles et al. and Speer with the brush of Simonton. Appellants disagree at least because such a combination does not result in a device having each element of claim 32. It is respectfully requested that the rejection be reversed.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of independent claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Broyles et al. which is intended to provide “increased dispensing control.” Para. 0008. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, thereby spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of precise material dispensing described by Broyles et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner.

The proposed combination of the device of Broyles et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Broyles et al. Simonton does nothing to remedy these deficiencies. Claim 32 depends from and includes each element of independent claim 20, and is in condition for allowance for at least the same reasons as claim 20. It is respectfully requested that the rejection of claim 32 be reversed.

Eighth Ground of Rejection

Claim 34 was rejected under 35 U.S.C. § 103(a) as unpatentable over Broyles et al. in view of Speer, further in view of Simonton et al., and further in view of Ferguson. The Examiner indicated that the combination of the devices of Broyles et al. and Speer include each element of claim 34, but does not include a kit with a system according to claim 33, including at least one of a dental instrument, a disposable cartridge, a glove, or a bonding or etching agent. The Examiner concluded, however, that Ferguson describes a kit including a glove, and that it would have been obvious to one of ordinary skill in the art to modify the combination of Broyles et al., Speer, and Simonton et al. with the kit of Ferguson. Appellants disagree at least because such a combination does not result in a device having each element of claim 34. It is respectfully requested that the rejection be reversed.

As discussed in response to the First Ground of Rejection above, and incorporated herein by reference, Speer does not include the self-opening closure system of independent claim 20. The Examiner has provided no support for their opinion that the plug of Speer is forced off when the piston is pushed forward with “enough force,” and one of skill in the art could reasonably conclude that the contents of the device of Speer would leak past a plunger towards the rear of the device, or that the syringe container would rupture, before “enough force” is attained to force the plug off.

Furthermore, the combination proposed by the Examiner destroys the functionality of the device of Broyles et al. which is intended to provide “increased dispensing control.” Para. 0008. Even if the plug of Speer were capable of being forced off by advancement of the plunger, the materials contained in the device would likewise be forced out at a heightened pressure, thereby spilling and splattering in an undesirable manner. Further, the ejected plug could land in or on the patient being treated, or otherwise interfere with the procedure. Such results are inconsistent with the importance of precise material dispensing described by Broyles et al., and one of skill in the art would have no reason to consider the combination proposed by the Examiner.

The proposed combination of the device of Broyles et al. with the plug of Speer does not render claim 20 obvious because the combination does not include the self-opening closure system of claim 20 and it destroys the functionality of the device of Broyles et al. Ferguson does nothing to remedy these deficiencies. Claim 34 depends from and includes each element of

independent claim 20, and is in condition for allowance for at least the same reasons as claim 20. It is respectfully requested that the rejection of claim 34 be reversed.

CONCLUSION

For the foregoing reasons, Appellants respectfully request that the Board reverse the Examiner on all counts.

Respectfully submitted,

July 6, 2011

Date

PLO/cad

Document No. 984462

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CLAIMS APPENDIX:

1-19. (Canceled.)

20. (Previously Presented) A delivery system for controlled dispensing of a substance, the system comprising:
a cartridge having at least two compartments for storing material components, wherein the system is adapted to mix the components to form a substance;
a plunger having at least two pistons for sealing the respective compartments and advancing the material components in the at least two compartments;
a lever and a geared connection rod for providing controlled dispensing of the substance;
and
a self-opening closure system which seals the front ends of the compartments and opens when the plunger is advanced, the self-opening closure system comprising a plug that may be pushed forward upon movement of the plunger toward the front end of the cartridge.

21. (Canceled).

22. (Canceled).

23. (Canceled).

24. (Previously Presented) The delivery system of claim 20, wherein the lever and a pawl are adapted to reset to their original positions after each activation without the presence of additional springs.

25. (Previously Presented) The delivery system according to claim 20, comprising a blocking member which restricts upward movement of the lever.

26. (Previously Presented) The delivery system according to claim 20, further comprising a reinforcement member for hindering backlash movement of the connection rod, wherein a pawl is adapted to lift the reinforcement member and thereby release the connection rod.
27. (Previously Presented) The delivery system according to claim 20, further comprising a reservoir for receiving the mixed substance.
28. (Previously Presented) The delivery system according to claim 27, wherein the reservoir comprises a sleeve which is movable over the exterior surface of the cartridge and a cavity for receiving the substance exiting the cartridge, the cavity being formed by the interior surface of the sleeve and the exterior surface of the cartridge.
29. (Previously Presented) The delivery system according to claim 28, wherein the lever is attached to a sleeve, and a pawl engages with the lever so that upon each push of the lever, the cartridge is caused to move forward toward the cavity thereby providing controlled dispensation of the substance.
30. (Previously Presented) The delivery system according to claim 27, wherein by pressing the lever, a pawl engages with the connecting rod and thereby activates a plunger, and a piston is moved forward into the reservoir.
31. (Previously Presented) The delivery system of claim 20, wherein the cartridge comprises an actuator part and a material receptacle having at least two compartments for storing material components, the material receptacle being separable from the actuator part.
32. (Previously Presented) The delivery system according to claim 20, further comprising a brush.

33. (Previously Presented) The system according to claim 20, further comprising at least one of the following materials: enzyme-containing compositions; dental primers; bondings; etching gel/liquids; varnishes; glue, pharmaceuticals, liquids or gels; a substance for the treatment or prevention or identification of caries; a substance for the prevention or identification or removal of plaque; a substance for root canal treatment; a substance for the removal of carious or decayed or infected dentine or enamel and/or a substance for the removal of denatured dentine.

34. (Previously Presented) Kit with a system according to claim 33, further comprising at least one of the following members: a dental instrument; a disposable cartridge; a glove or a bonding or etching agent.

35. (Previously Presented) The delivery system of claim 20, wherein the self-opening closure system comprises a plug that seals each of the compartments.

36. (Canceled).

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None